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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,745	07/08/2005	Hiroshi Yamamoto	28955.4028	9824
27890 7590 08/21/2008 STEP TOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036				
EXAMINER				
NELSON, MICHAEL E				
ART UNIT		PAPER NUMBER		
1794				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,745

Applicant(s)

YAMAMOTO ET AL.

Examiner

MICHAEL E. NELSON

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/ICE)
Paper No(s)/Mail Date 02/04/08 & 7/24/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. In response to Applicant's reply dated 05/19/2008, claims 1-21 are pending.
Claims 1, 12 and 15 have been amended. Claim 21 has been added.

Specification

2. The disclosure is objected to because of the following informalities:
3. On page 16, line 9, the specification states "It s preferable that, in general formula (1), Ar^{1'} represents a group.." Ar^{1'} is not found in formula (1), and only in formula (1').

Appropriate correction is required.

Claim Objections

4. Claim 11 is objected to because of the following informalities:
5. Claim 11 states, "wherein A¹ to A³ each independently represents a nitrogen or carbon atom." However, only A¹ and A² are shown in the structure of claim 11.
6. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-8, 14-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

9. Claim 1 has been amended to include the condition where Ar^1 represents a divalent aromatic hydrocarbon group having 10 to 60 carbon atoms, and may have a substituent. The specification states on page 16 that Ar^1 may a divalent aromatic hydrocarbon having 6 to 60 carbon atoms, preferably 6 to 40 carbon atoms, and more preferably 6 to 20 carbon atoms. Applicant indicates formula (43) on page 17 to support the end point of 10 carbon atoms. However, formula (43) illustrates only a single example of an aromatic hydrocarbon having 10 carbon atoms, specifically naphthalene. There are at least 3 other aromatic hydrocarbons which have 10 carbon atoms which are not shown in the specification. Therefore, the specification does not support the generic use of 10 carbon atoms based on a single illustrative example.

10. The only support for a range of 10 to 60 carbons is on page 20, where Ar^1 has 10 to 60 carbon atoms only when L is an arylene group or heteroarylene group. When L is a single bond, Ar^1 has 11 to 60 carbon atoms.

11. Furthermore, claim 1 includes the proviso that Ar^2 may not be substituted with a heteroaryl group. Nowhere in the specification is this proviso mentioned. Applicant points to specific compounds to support this limitation, but the specific compounds do not support a negative limitation that ring Ar^2 may not be substituted with a heteroaryl

group ring. Page 18-19 of the specification describes the substituents for Ar², including heteroaryl groups having **3 to 40 carbons**, but not heteroaryl groups in general.

12. The cited phraseology clearly signifies a “negative” or “exclusionary” limitation for which the applicants have no support in the original disclosure. Negative limitations in a claim which do not appear in the specification as filed introduce new concepts and violate the description requirement of 35 USC 112, first paragraph, *Ex Parte Grasselli, Suresh, and Miller*, 231 USPQ 393, 394 (Bd. Pat. App. and Inter. 1983); 783 F. 2d 453.

13. The insertion of the above phraseology as described above positively excludes heteroaryl groups as substituents for Ar², however, there is no support in the present specification for such exclusions. While the present specification is silent with respect to the use of heteroaryl groups in general, is noted that as stated in MPEP 2173.05(i), the “mere absence of a positive recitation is not the basis for an exclusion.”

Claim Rejections - 35 USC § 102

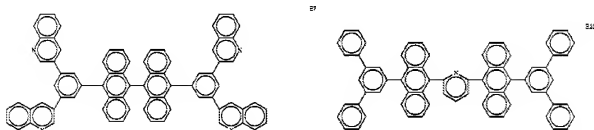
14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1-4, 7-8, 14-18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosokawa et al. (US 20020048687).
16. Concerning claims 1-4, and 7-8, Hosokawa et al. describe anthracene materials, specifically heterocycle containing anthracene materials [0040]. Specific examples of compounds described by Hosokawa et al. are shown below.

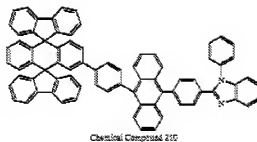
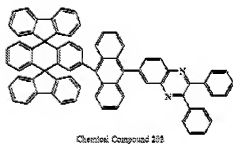


17. Compound E7, shown above, meets the limitations of claims 1-2, 4, 8 and 21 where HAr is quinoline (per claim 4), L is phenylene (arylene with a substituent, per claim 2), Ar¹ is anthracene (per claim 8), and Ar² is also anthracene, which is substituted by an aryl group having a substituent (per claim 21).
18. Compound E23, shown above, meets the limitations of claims 1, 3, 7-8 and 21 where HAr is pyridine, L is a single bond, Ar¹ is anthracene (per claim 3 and 8), having 14 carbons, and Ar² is triphenyl (per claim 7), or alternately Ar² is biphenylene (aryl having 6 carbons, per claim 21), substituted with a phenyl group (aryl having 6 carbons, per claim 21).
19. Concerning claims 14-18, Hosokawa et al. describe an organic electroluminescent device having at least one organic compound layer containing a light emitting layer between a pair of electrodes (See [0047]-[0054]) (per claims 14-15). The

material described above is used in either the light emitting layer (per claims 16-17), or electron injection layer (per claim 18). ([0056]).

20. Claims 1-6, 8, 14-18 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (6,998,487).

21. Concerning claims 1-6, 8 and 21, Kim et al. describe double-spiro organic compounds for use in organic electroluminescent devices. Specific examples of the compounds are shown below.



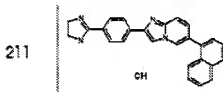
22. Compound 203 shown above meets the requirement of claims 1, 3-5, and 8 where HAr is quinazoline, specifically 2,3-diphenylquinazoline (per claims 4-5), L is a single bond, and Ar¹ is anthracene (aryl having 14 carbons, per claims 3 and 8), and Ar² is a substituted phenyl group.

23. Compound 210 shown above meets the requirements of claims 1-2, 6, 8 and 21, where HAr is benzimidazole, L is a phenylene (arylene having 6 carbons, per claims 2 and 6), Ar¹ is anthracene (arylene having 14 carbons, per claim 1 and 8), and Ar² is phenyl (Aryl having 6 carbons with a substituent, per claim 1), which is a substituted phenyl group (Aryl having 6 carbons per claim 21).

24. Concerning claims 14-18, Kim et al. organic electroluminescent devices having a light emitting layer between an anode and cathode (pair of electrodes, per claim 15) (Column 37, lines 50-62). The materials described above are used in the light emitting layer (column 42, lines 9-11), or as electron transporting material in the electron transporting (column 40, lines 58-60) or injection layer (column 41, lines 33-34).

25. Claims 9-11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Paal et al. (GB 2351081).

26. Concerning claims 9-11 and 13, Paal et al. describe pharmaceutically active imidazoline compounds, including the specific compound shown below (page 40)



27. The compound 211 shown above meets the requirements of claims 9-11 and 13 where Ar¹ is naphthyl (aryl having 10 carbons, per claim 13), L¹ and L² are single bonds, and Ar² is substituted phenyl (aryl having 6 carbons), A¹ to A³ are carbon (per claims 10 and 11).

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa et al. (US 20020048687) as applied to claim 18 above, and further in view of Kido et al. 6,013,384.

30. Concerning claims 19-20, Hosokawa et al. describe the materials for use in organic electroluminescent devices discussed above, including the use of the material in an electron injection layer of the device. Hosokawa et al. are silent on the use of a reducing dopant in the electron injection layer.

31. Kido et al. describe organic electroluminescent devices where the electron transport layer adjacent to the cathode is doped with a metal capable of acting as an electron donor (reductive dopant). Kido et al. disclose that doping the layer results in a lowered driving voltage, regardless of the work function of the cathode material. (abstract). Kido et al. disclose that the dopant includes alkali metals, and alkali earth metals. (column 4, lines 8-11)

32. Given the teaching of the benefit of doping the electron transport layer with a reductive dopant, as described by Kido et al. it would have been obvious to one of ordinary skill in the art to dope the electron transport layer (comprising the heterocyclic compound) adjacent to the cathode with a reductive dopant to decrease the driving voltage.

33. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (6,998,487) as applied to claim 18 above, and further in view of Kido et al. 6,013,384.

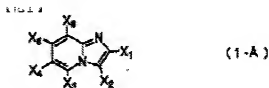
34. Concerning claims 18-19, Kim et al. describe the materials for use in organic electroluminescent devices discussed above, including the use of the material in an electron injection layer of the device. Kim et al. are silent on the use of a reducing dopant in the electron injection layer.

35. Kido et al. describe organic electroluminescent devices where the electron transport layer adjacent to the cathode is doped with a metal capable of acting as an electron donor (reductive dopant). Kido et al. disclose that doping the layer results in a lowered driving voltage, regardless of the work function of the cathode material. (abstract). Kido et al. disclose that the dopant includes alkali metals, and alkali earth metals. (column 4, lines 8-11)

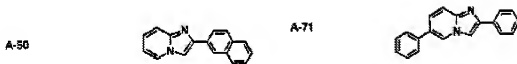
36. Given the teaching of the benefit of doping the electron transport layer with a reductive dopant, as described by Kido et al. it would have been obvious to one of ordinary skill in the art to dope the electron transport layer (comprising the heterocyclic compound) adjacent to the cathode with a reductive dopant to decrease the driving voltage.

35. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsuka et al. (JP 2001-035664).

36. Concerning claims 9-13, Nakatsuka et al. describe compounds containing the imidazopyridine structure shown below. [0007] Nakatsuka et al. use the compounds in an organic electroluminescent device. Nakatsuka et al. define the substituents on the molecule where X_4 includes substituted or unsubstituted aryl substituents (claim 7, [0007]). Nakatsuka et al. explicitly mention 1- and 2-naphthyl substituents [0014], and aryl substituents of 6-10 carbons are preferred, but are not limited [0020].



Nakatsuka et al. give several examples, including naphthyl substituents (shown below, compound A-50, page 13), though they do not illustrate specifically a naphthyl substituent at X_4 , but do give examples of aryl substitution at position X_4 , as shown below (compound A-71, page 17, column 31).



Nakatsuka et al. give further examples of compounds with more than one aryl ring, such as the compounds shown below. (Compound A-32, column 21)

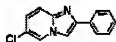


Nakatsuka et al. describe compounds which could easily be functionalized with other substituents by simply Suzuki type coupling reactions, such as the compounds shown

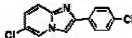
below (A-19, page 9, A-26 and A-27, page 11; A-14, page 13; and A-72, page 17).

These compounds can easily be further functionalized at either end of the molecule.

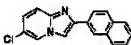
A-19



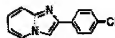
A-26



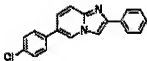
A-27



A-45

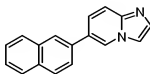


A-72

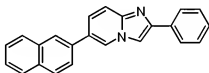


37. As stated in the MPEP 2144.09 (II) compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977).

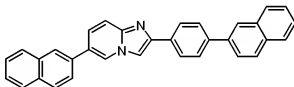
38. The compound A-50 is a position isomer of the structure shown below (which is within the scope of the claims), and as such, would be predicted to function in the manner, and therefore be obvious to one of ordinary skill.



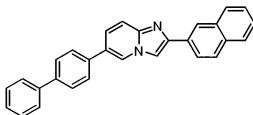
Given the level of detail in the disclosure, it would have been obvious to one of ordinary skill in the art to make imidazopyrimidine compounds such as the ones shown below (among others), since they would be predicted to function in the same manner. The compounds shown below could be easily prepared from compounds A-19, A-25, or A-27 shown above by a single reaction.



This compound meets the limitations of claims 9-11, where Ar¹ is naphthyl (10 carbons), and Ar² is phenyl (6 carbon aromatic), and L¹ and L² are both single bonds.



This compound meets the limitations of claims 9-12 where Ar¹ is naphthyl (10 carbons), and Ar² is phenyl (6 carbon aromatic), and L¹ is a single bond, and L² is phenylene, per claim 12



This compound meets the limitations of claims 9-13 where Ar¹ is phenyl (6 carbon aromatic, per claims 9-11 and 13), Ar² is naphthyl (10 carbon aromatic), L¹ is phenylene (per claim 12), while L² is a single bond.

Double Patenting

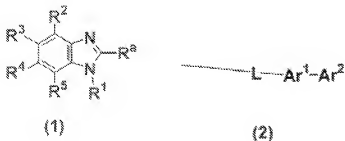
39. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

40. Claims 1-3, 6-8, 14-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-11 of copending Application No. 11/691888. Although the conflicting claims are not identical, they are not patentably distinct from each other because application number 11/691888 claims a nitrogen containing heterocycle with the formula (1) shown below where at least one R group has formula (2). Ar¹ includes an aromatic group with 6 to 60 carbon atoms, and Ar² includes substituted aryl groups. The compounds are further used in an electroluminescent device, and described as electron transporting materials, and further used with a reducing dopant. It is apparent from the structures that the structures of the

material described in the copending claims overlaps with the structure of the material claimed in the present claims.



This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

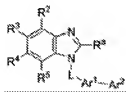
Claims 1-3, 6-8, 14-21 directed to an invention not patentably distinct from claims 1-11 of commonly assigned Application No. 11/691888. See discussion above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 11/691888, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon

the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

41. Claims 1-3, 6-8, and 14-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 11/566008. Although the conflicting claims are not identical, they are not patentably distinct from each other because application number 11/566008 claims a compound with the formula (1-a) shown below, where Ar¹ is 9,10-anthracenediyl (aryl of 14 carbons), and Ar² includes substituted or unsubstituted aryl groups. The material is used in an electroluminescent device, and described as an electron transporting material, as well as used with a reductive dopant. Given the structures, it is apparent that the compounds claimed are within the scope of the current claims, and as a result one of ordinary skill would arrive at the current invention from the copending one.



(1-a)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

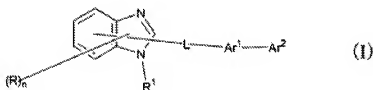
Claims 1-3, 6-8, and 14-21 are directed to an invention not patentably distinct from claims 1-10 of commonly assigned Application No. 11/566008. See discussion above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 11/566008, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

42. Claims 1-3, 6-8, and 14-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-15 of copending Application No. 10/547312. Although the conflicting claims are not identical, they are not patentably distinct from each other because Application Number

10/547312 claims material of formula (1) shown below, where L, Ar¹ and Ar² are defined the same as in the instant application. Since the instant application is not limited by the nature of the heterocycle, the scope of the claims in the two applications overlaps. The material is used in an electroluminescent device, and described as an electron transporting material, as well as used with a reductive dopant. Given the structures, it is apparent that the compounds claimed are within the scope of the current claims, and as a result one of ordinary skill would arrive at the current invention from the copending one.



This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

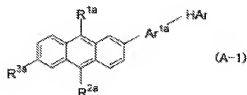
Claim 1-3, 6-8, and 14-21 directed to an invention not patentably distinct from claims 1-15 of commonly assigned Application No. 10/547312. See discussion above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 10/547312, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this

application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

43 Claims 1-3, 5-8, 14-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-15 of copending Application No. 10/594323. Although the conflicting claims are not identical, they are not patentably distinct from each other because Application number 10/594323 claims a heterocyclic compound of the formula (A-1) shown below where HAr corresponds to HAr of the instant application, Ar^{1a} corresponds to L, the anthracene corresponds to Ar¹ and R^{3a} corresponds to Ar² of the instant application. Since the instant application is not limited by the nature of the heterocycle, or the anthracene, the scope of the claims in the applications overlaps. The material is used in an electroluminescent device, and described as an electron transporting material, as well as used with a reductive dopant. Given the structures, it is apparent that the compounds claimed are within the scope of the current claims, and as a result one of ordinary skill would arrive at the current invention from the copending one.



This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

44. Applicant argues that the azaindolizine compounds of the present are not obvious in light of Nakatsuka et al., However, Nakatsuka et al. clearly teach substitution at more than one position of the azaindolizine ring, and include substituents with at least 10 carbons as discussed above. Applicant states that the specific examples described by Nakatsuka et al. are not within the scope of the present claims. However, "applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others." In re Courtright, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967).

45. Where compounds are similar in structure, it is the similar properties that provide motivation for a person of ordinary skill to make species structurally similar to the prior art.

46. As stated in the MPEP 2144.08 (d):

Consider the properties and utilities of the structurally similar prior art species or subgenus. It is the properties and utilities that provide real world motivation for a person of ordinary skill to make species structurally similar to those in the prior art. Dillon, 919 F.2d at 697, 16 USPQ2d at 1905; In re Stemniski, 444 F.2d 581, 586, 170 USPQ 343, 348 (CCPA 1971).

And

If the claimed invention and the structurally similar prior art species share any useful property, that will generally be sufficient to motivate an artisan of ordinary skill to make the claimed species.

47. Nakatsuka et al. teach the functionality of the azaindolizine ring in organic electroluminescent devices, a functionality which is shared by the present claims. This teaching alone would provide motivation to one of ordinary skill to make species structurally similar, such as those of the present claims.

48. Applicant further argues that the tested compound offer an unexpected improvement over the compounds described by Nakatsuka et al., based on the presence of a particular substituent compared with an example compound. However, the inventive compounds compared with the comparative compound are not structurally related enough to give a direct comparison. The comparative structure is a pyrene bonded to the azaindolizine ring structure, whereas the inventive examples all have multiple substituents with an anthracenediyl structure rather than pyridine. The analogous compound to the comparative example, within the scope of the present claims, would have a pyrene substituent bonded at a different position (corresponding to applicant's Ar¹) in the azaindolizine ring. Furthermore, the comparison does not support the scope of the claims. The comparative compounds all have a similar structure, where the azaindolizine is flanked by a phenyl group (corresponding to applicant's Ar¹, and an phenylene (corresponding to applicant's L², and an anthracene corresponding to Applicant's Ar², which is further substituted with either a phenyl, or

naphthyl substituent. These few examples do not support the scope of the claims as written for the purpose of showing an unexpected result.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL E. NELSON whose telephone number is (571)270-3453. The examiner can normally be reached on M-F 7:30am-5:00pm EST (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael E. Nelson
Examiner
Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794